CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method of replicating multicast datagrams in a network device, said method comprising:

determining by a memory management unit whether a scheduled outgoing datagram stored in a main memory is a multicast (MC) packet;

when the scheduled outgoing datagram type is the MC datagram:

performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count register;

populating a count field based on a number of equal cost paths for each Internet Protocol (IP) route for the packet;

randomly choosing one of the equal cost paths for the packet;

~~awaiting a ready signal from an egress port of the network switch;~~

sending the outgoing datagram to the egress port from the main memory along with the copy count value and route information for the chosen equal cost path;

changing the copy count value in the copy count register;

modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value; and

forwarding the outgoing datagram from the egress port.

2. (Original) A method as recited in claim 1, wherein the method performed by the memory management unit is suspended based on a presence of a higher-priority outgoing datagram.

3. (Previously presented) A method as recited in claim 1, further comprising:

waiting until the copy count value in the copy count register is zero and releasing a pointer to a memory location of the outgoing datagram in the main memory.

4. (Previously presented) A method as recited in claim 1, wherein the performing the lookup of the replicate count table comprises determining a pointer based on the group number and using

that pointer as an index for the replicate count table to perform the lookup.

5. (Previously presented) A method as recited in claim 4, wherein the sending the outgoing datagram comprises:

        reading a first portion of the datagram from the main memory;

        sending the first portion, along with the copy count value and the pointer, to the egress port;

        continuing to read and send subsequent portions of the datagram until a last portion is read; and

        decrementing the copy count value in the copy count register.

6. (Previously presented) A method as recited in claim 4, wherein the modifying the VLAN identifier of the outgoing datagram comprises accessing a VLAN ID table using the pointer as an index to obtain a new VLAN identifier.

7. (Previously presented) A method as recited in claim 6, wherein the new VLAN identifier is obtained from a bit value in an entry in the VLAN ID table provided by the pointer, where the bit value is equal to the copy count value.

8. (Currently amended) A network device for handling datagrams in a network, comprising:

        a main memory;

        a memory management unit;

        determining means for determining whether a scheduled outgoing datagram stored in the main memory is a multicast (MC) datagram;

        performing means for performing a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet and writing the copy count value to a copy count register;

        populating means for populating a count field based on a number of equal cost paths for each Internet Protocol (IP) route for the packet;

        choosing means for randomly choosing one of the equal cost paths for the packet;

~~awaiting means for awaiting a ready signal from an egress port of the network switch;~~

sending means for sending the outgoing datagram to the egress port from the main memory along with the copy count value and route information for the chosen equal cost path;

changing means for changing the copy count value in the copy count register;

modifying means modifying a VLAN identifier of the outgoing datagram if necessary based on the copy count value; and

forwarding means for forwarding the outgoing datagram from the egress port;

wherein the performing, awaiting, sending, changing, modifying and forwarding means are configured to be activated when the scheduled outgoing datagram type is the MC datagram.

9. (Original) A network device as recited in claim 8, further comprising suspending means for suspending a replication operation of the memory management unit based on a presence of a higher-priority outgoing datagram.

10. (Original) A network device as recited in claim 8, further comprising waiting means for waiting until the copy count value in the copy count register is zero and releasing means for releasing a pointer to a memory location of the outgoing datagram in the main memory.

11. (Original) A network device as recited in claim 8, wherein the performing means comprises second determining means for determining a pointer based on the group number and implementing means for implementing that pointer as an index for the replicate count table to perform the lookup.

12. (Original) A network device as recited in claim 11, wherein the sending means comprises:

reading means for reading a first portion of the datagram from the main memory;

second sending means for sending the first portion, along with the copy count value and the pointer, to the egress port; and

decrementing means for decrementing the copy count value in the copy count register;

wherein the reading and second sending means are configured to continue to read and send subsequent portions of the datagram until a last portion is read.

13. (Original) A network device as recited in claim 11, wherein the modifying means comprises accessing means for accessing a VLAN ID table using the pointer as an index to obtain a new VLAN identifier.

14. (Previously presented) A network device as recited in claim 13, wherein the new VLAN identifier is obtained from a bit value in an entry in the VLAN ID table provided by the pointer, where the bit value is equal to the copy count value.

15. (Currently amended) A network device for handling datagrams, comprising:

at least one data port interface, said at least one data port interface supporting a plurality of data ports transmitting and receiving datagrams;

a memory management unit, in communication with said at least one data port interface; and

a main memory, said main memory communicating with said at least one data port interface and controlled by the memory management unit;

wherein the memory management unit is configured to determine whether a scheduled outgoing datagram stored in the main memory is a multicast (MC) datagram;

wherein when the scheduled outgoing datagram is of a type that is the MC datagram, the memory management unit is configured to perform a lookup of a replicate count table to determine a copy count value that represents a number of copies that have been generated to duplicate a particular packet, configured to write the copy count value to a copy count register, configured to populate a count field based on a number of equal cost paths for each Internet Protocol (IP) route for the packet, configured to randomly choose one of the equal cost paths for the packet, configured to send the outgoing datagram to the egress port from the main memory along with the copy count value and route information for the chosen equal cost path, configured to change the copy count value in the copy count register; and

wherein the at least one data port interface is configured to modify a VLAN identifier of the outgoing datagram if necessary based on the copy count value and configured to forward the outgoing datagram from the egress port.

16. (Original) A network device as recited in claim 15, wherein the memory management unit is configured to suspend the replication of the outgoing datagram based on a presence of a higher-priority outgoing datagram.

17. (Original) A network device as recited in claim 15, wherein the memory management unit is configured to wait until the copy count value in the copy count register is zero before releasing a pointer to a memory location of the outgoing datagram in the main memory.

18. (Previously presented) A network device as recited in claim 17, wherein the memory management unit is configured to determine a pointer based on a group number and configured to implement that pointer as an index for the replicate count table to perform the lookup.